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AUTHOR Lionberger, Herbert F.; Wong, Tso Sang
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ABSTRACT

A 1977 study of education assistants' linking role in the University of Missouri's Small Farm Family Program (intended to favor small farmers in providing extension information) focused on conditions influencing ability of education assistants to serve as University information-user system linkers on behalf of small farmers. All Missouri education assistants that year received questionnaires about personal characteristics, contacts with University information resource systems, relationships with small farmers and ways of working with them, and assistants' opinions about the program (operation, problems, achievements); 34 assistants (95%) responded. Results showed assistants were like small farmers in respects essential for effective communication and exercise of personal influence in adviser-client relationships: all had been farmers and 85.3% still were, and their relationship with small farmers was empathetic, interactive, and highly satisfying. Assistants indicated their strongest rewards were from helping clients with problems and from opportunities to learn while they worked; important roles were identified as listening to farmers and expressing recognition of their achievements, and making clients aware of help available through extension channels and government agencies. Assistants regularly used linkages with the University resource system (in-field subject matter specialists, College of Agriculture publications, campus-based faculty specialists) and other resources (agricultural agencies, commercial sources, and large and small farmers). (MH)

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UNIVERSITY OF MISSOURI-COLUMBIA
COLLEGE OF AGRICULTURE
AGRICULTURAL EXPERIMENT STATION

A. MAX LENNON, DIRECTOR

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Information Developer - User System Linking Roles of Education Assistants in the Missouri Small Farm Family Program

Herbert F. Lionberger and Tso Sang Wong

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INFORMATION DEVELOPER - USER SYSTEM LINKING ROLES OF EDUCATION ASSISTANTS IN THE MISSOURI SMALL FARM FAMILY PROGRAM

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Information Developer - User System Linking Roles of Education Assistants in the Missouri Small Farm Family Program

*Herbert F. Lionberger and Tso Sang Wong**

1. CONCERN FOR THE SMALL FARMER

On the World Scene

In many societies today, there is a tendency for divisions to develop and increase between the economically privileged and those economically disadvantaged. In the agricultural sector this tendency is represented by the growing differences between big farmers and little ones. As this happens, access to the means of production becomes relatively less available for the small than for the larger farmers. Credit, supply, information and service institutions tend to become organized and operate to the differential advantage of the larger farmers. Thus, collectively the institutional infrastructure contributes to increasing differences between large and small farmers rather than decreasing them.

In this scenario research and educational services are no exception. The so-called "knowledge gap hypothesis" (Tichenor et al, 1970) holds that in any segment of society with large gaps between "knowledgeables" about something and not knowledgeables, any educational endeavor to reduce this gap is likely to increase it if the program is made equally accessible to all, i.e. to big and little alike. In fact, this inclination may well extend to the acquisition of the means of production and possessions that increase the life chances of the "bigs" over the "littles" just as it applies in the acquisition of knowledge. For extension, the knowledge gap problem is further intensified by working disproportionately with those who ask for help which in turn leaves less time for those who do not and probably need help more. This coupled with an inclination to the so-called "trickle down" mode of operation — assuming that trickle down actually does occur from early adopters to later adopters — deprives the later of windfall profits that accrue to successful early adopters.

The time ultimately comes when the differences between the advantaged and disadvantaged elements become so great and the conditions of the bypassed segments become so bad by comparison that either the conditions of the bypassed elements or the consequences of their growing numbers to all sectors of society are such that public action seems warranted—even if this is not preceded by

*Herbert F. Lionberger and Tso Sang Wong are on the staff of the Rural Sociology at the University of Missouri-Columbia Campus. Contribution from the Missouri Agricultural Experiment Station Journal Series No. , Approved

revolutionary protests by the "littles" who come to regard themselves as oppressed.

In a democratic society this concern may emerge out of social justice concerns, feelings of guilt in having failed to achieve the goals of a democratic society, or the drag that the existence of such a group has on the economy. Certainly on the world scene the rhetoric of social equity, if not also social action has come to the fore. Pragmatic considerations of food for hungry people and production systems more commensurate with the realities of energy supply also surface.

In the United States where food surpluses are often more troublesome than food deficits, the concern for the small farmer as a food producer is superseded by other matters. Surely social equity, achievement of the democratic ideal, and the embarrassment of islands of poverty in a landscape of affluence are operative. But there are also problems of alternative opportunities for those who move to urban centers and of preserving a life style chosen by some as ideal which at the same time is also regarded as being in the interest of society. Perhaps these advantages are presumed to accrue mostly from living in the country; particularly to rearing children (Lionberger, Smith and Holik, 1979).

In the State of Missouri

In Missouri, as on the national and often on the international scene, the inclination for the numbers of small farmers and the big-little differences to increase proceeds. This is indicated by the fact that the majority of Missouri farm families live on small farms with annual farm gross sales of less than $20,000.00. According to the 1978 census of Agriculture, 83,148 farms or 68.3% of the total of Missouri were in this category (Campbell, 1980). Furthermore, 70% to 80% of the farm sales were spent for farm production expenses. The net farm incomes of these small farmers were less than $4,000.00 per year (Enlow, Holik and Wiggins, 1979). As a consequence many could no longer depend solely on farming for a livelihood. In the meantime, part-time farming continues to be a chosen way of life for many. In 1978, 58,576 or 48.1% of the Missouri farm families reported their principal occupation as other than farming (Campbell, 1980). This, of course, included many of the very small ones.

The increasing number of small farmers is the result of a combination of reasons. Some of those for which extension shares some responsibility are:

(1) differential attention to those who ask for help and perhaps need it less (Mordenave, 1976);
(2) an informational offering more suited to large than small farmers and/or;
(3) communication gaps between subject matter specialists and small farmers. This results in communicating more with the big farmers than the little ones.

The last is well exemplified by often heard statements from field specialists who say "I just can't communicate with these people."

2. EXTENSION'S RESPONSE

The Small Farm Family Program in Historical Perspective

To address this emergent need to find more effective ways of getting information and services available from the university to small farmers, a special educational program was experimentally launched by the University of Missouri in 1971. Help was extended only to those who were interested, who needed more income and who were not currently involved in regular extension programs. By 1977 (the date of this study) the program had been extended to eleven extension planning areas serviced in the field by 36 paraprofessionals. These were referred to as education assistants. A farm management specialist was designated responsibility for the program in each of the geographic areas. In 1976 when family resource management and home gardening were added a home resource management specialist was assigned co-responsibility for the program in each administrative area. At the same time the name was changed to the Small Farm Family Program.

Leadership for agricultural production and management was vested in the University of Missouri-Columbia campus. Lincoln University at nearby Jefferson City assumed responsibility for family resource management, home weatherization and maintenance and home gardening.

The Social Systems Context of Information Development and Delivery

In a continuously modernizing agriculture, all farmers require a continuing supply of updated locally adapted information. Most of what they use is necessarily generated by specialized off-farm systems that draw heavily on the basic sciences. As is so often the case, development of usable information and technology occurs along a science-theory-to-use continuum (See the vertical column of Figure 1) and as a result of performing a series of necessary functions. These are enumerated across the top of Figure 1 and are briefly defined as follows:

Innovation - development of a new idea of practice

Validation - testing new ideas or practices under field conditions to determine their suitability to local use

Dissemination - getting the new knowledge (ideas or practices) to people who might use them

Information - potential users informing themselves about new ideas and practices

Legitimation - potential users making up their own minds (becoming persuaded) to use the new knowledge on the basis of their own rules of acceptability

Integration - fitting the new knowledge into the users' plans to achieve their own goals

Governance - providing a means of controlling how the total system works and for whom

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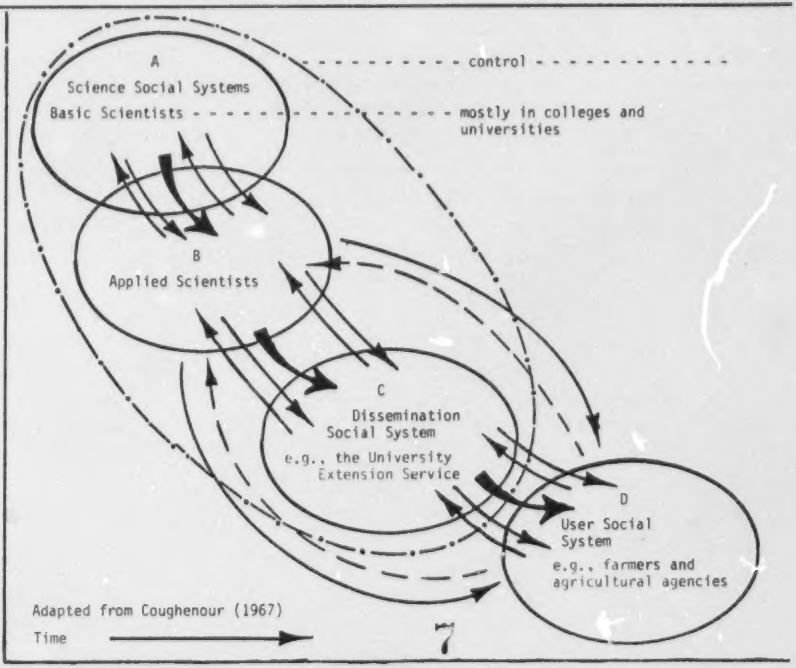
TRANSFORMATION CONTINUUM from Theory to Practice	FUNCTIONS AND SUBFUNCTIONS THAT MUST BE PERFORMED INNOVATION (VALIDATION) DISSEMINATION INTEGRATION Research and Development Information Persuasion (Decision) Reinforcement

RESEARCH

1. Test theories and add to basic science knowledge
2. Try to intervene in the scientific process
3. Invent something potentially useful
4. Test locally to determine whether -
   - It will work?
   - Is it feasible?
   - Will it fit in?

USE

5. Put the locally validated invention or invention to use in own social system



The circles in the diagram represent where the action is. Researchers do research mostly, extension workers get information out mostly and people (you and I included) are generally the ones who use it. Other required functions may not be exclusively assigned to any one of the systems. The paraprofessionals (education assistants) work in the information disseminating part of the system between where science-based information is developed and where it is used. They become involved in all of the functions except innovation. Their ability to communicate and how they operate in this in-between system situation has a great deal to do with how the system works on behalf of its intended information receivers, in this case small farmers.

When communication gaps between the highly educated and specialized researchers and extension specialists on the one hand and small economically deprived farmers on the other become too great, understanding and trust between the two greatly declines. Simply stated, each finds it difficult to communicate with the other. This appeared to be one of the conditions out of which the experimental small farmer program emerged and developed.

Reasons for the emergent communication problems likely reside in:

(1) the way the total information disseminating (extension) system operates;
(2) the appropriateness of the information and technology available for delivery;
(3) the capability of the professional staff to communicate with small farmers.

With these in mind we turn briefly to requirements for decreasing the communication impasse. After this, we look at how the Missouri Small Farm Family Program tries to reduce the communication gap.

Bridging the Communications Gap Between the University and Small Farmers

One problem centers around the long term consequence of the previously noted knowledge gap hypotheses (Tichenor et al, 1970). Where extension effort is directed mostly to those who ask for or who are willing to receive help, as it often is, and people are free to choose, those in least need of help gain more and end up relatively better off than before. The net long term result may be to increase the gap between "knowers" and "not knowers", unless:

(1) steps are taken to keep the "haves" out of the program; or
(2) the program is designed to be more attractive to the "have nots" and thus eliminate the "haves" by choice (Shingi and Mody, 1976).

A second requirement is a suitable body of knowledge to communicate to those left behind. Where is a possibility that the available information is more suited to the needs of others e.g. the "bigs", some means of selectively choosing and adapting that which is suited is necessary.

Third, the professionals who do the educating must be able to communicate with the farmers and at the same time listen to them.

All of these issues are addressed in the Missouri Small Farm Family Program where the education assistants must serve as information linkers between the university based research agencies and the small farmers.

How each of these problems are addressed in the Missouri Small Farm Family Program are in turn examined.

3. NATURE AND SCOPE OF THIS STUDY

The paper is concerned with the linking role of education assistants in the Missouri Small Farm Family Program. It is part of a larger study of agricultural and community development extension in the state. The specific focus is on conditions which were likely to influence the ability of education assistants to serve as University information-user system linkers on behalf of small farmers. To that end all education assistants in the state (1977) were asked to complete questionnaires about their personal characteristics, their contacts with the university information resource systems, their relationships with small farmers, the way they worked with them and their opinions about the program, its operation, its problems, and its achievements. The 34 who responded represented approximately 95 percent of those employed at the time. The results are reported in the contingency tables using mostly percentages and averages. Tests of statistical significance were not appropriate and not used.

4. OPERATIONAL FEATURES OF THE SMALL FARM FAMILY PROGRAM

Working with Farm Families

Missouri agricultural extension has long emphasized the farm family as a chief client and the farm and home plan as a major vehicle (Longwell, 1970, PP. 89-90; Burch, 1940). This combination received high acclaim in an earlier Balanced Farming Program. Thus, it is no wonder that the Missouri Small Farm Family initially and continues to emphasize the farm family as the appropriate educational focus. Such an orientation assumes that the primary reason for the presence of the university representative in the area is to help farm families achieve their own goals and to increase their capacity for doing so whether it be through improving the resource base of the farm itself, or the capacity of the family to manage their affairs. Both are concerns of the educational methods used which also require at least as much listening as talking.

Selecting Clients (the problem of keeping big farmers out)

As the small farmer program was expanded to places beyond the initial pilot project areas (1972), initiation of new programs were preceded by interviews with farmers designated as of low income in comparison to others in the locales

selected. The data collected provided information on which farm families were small enough on the basis of total income to qualify for inclusion. All on the eligibility list had to be small producers by comparison to others in the area. Additional requirements were (1) an expressed or implied interest in expanding and/or improving their farming operations, and (2) a desire for obtaining help in doing so. The survey and the selective list thus provided a formal mechanism for disproportionately selecting the "littles" over the "bigs". Most likely an information selection process differentially favoring the "smalls" also operated. The very nature of the program made it more attractive to little farmers than the big ones. Also to the extent that there was a big-little farmer consciousness in the respective areas, addition of clients by referral, mostly by other small farmers, tended to disproportionately select and enlist small farmers over big ones. It was in this context of determining eligibility that client selections were initially made and subsequently added.

Response of education assistants in the small farmer program tended to confirm initial intent for client selections in present practice. Thus as seen from Table 1 "being on the list" continued to be a consideration in selecting clients in most cases; less, perhaps than in the initial selection. As of old, most emphasis was placed on requests for help. Over two-thirds said this was very important. But in contrast to days past, the selection process operated in the context of farmers operationally defined as small.

Also within this context, selectivity was mostly in terms of criteria indicative of likely success in achieving expansionist goals, e.g. physical ability to do the work required, available work force, motivation and the education assistants' estimate of the clients capabilities for increasing his income (See Table 1). At the same time how realistic the help requested was in terms of the client's resource base to achieve projected goals was considered.

Notably absent in the selection process was frequent allusion to considerations that might be personally advantageous to the education assistants, e.g., distance from home and how close the prospective clients interests coincided with their own.

Obtaining Information Suited to Small Farmer Needs

Education assistants operate in geographic areas of assigned responsibility under the direction of a family resource management specialist and a farm management specialist designated by the university based governing board, as responsible for the Small Farm Family Program in the extension planning areas. Each is fortified by Guide Sheets available to all extension workers.[1] These consist of a voluminous carefully indexed and continually updated volume covering subjects that farm families are most likely to inquire about.

In addition they are provided with specially prepared Small Farmer Guide Sheets in which information from the university resource system is abstracted and is specially prepared and presented for the use of small farmers, e.g., on how to take care of one sow. Weekly one-half to one-day conferences are held in which the

TABLE 1. EDUCATION ASSISTANTS CLASSIFIED BY THE RELATIVE IMPORTANCE THAT THEY ATTACHED TO DESIGNATED CRITERIA FOR SELECTING CLIENTS WITH WHOM TO WORK

Criteria for Selecting Small Farmer Clients	Amount of Consideration Given								
	Total % (n=34)	None %	Very Little %	Little %	Some %	Much %	Very Much %	Don't Know %	No Answer %
Whether they are on the eligible list or not	100.0	17.6	11.8	8.9	17.6	14.7	17.6	5.9	5.9
Age	100.0	41.2	20.6	5.9	17.6	11.8	2.9	0.0	0.0
Specific request for help	100.0	0.0	0.0	2.9	8.8	17.6	67.6	0.0	2.9
Available manpower in the household	100.0	20.6	11.8	14.7	23.5	17.6	8.9	0.0	2.9
Distance from your home	100.0	58.8	17.6	8.9	8.9	2.9	2.9	0.0	0.0
Size of the farm	100.0	17.6	8.8	23.5	32.4	5.9	11.8	0.0	0.0
Whether help requested was realistic	100.0	0.0	8.9	5.9	38.2	14.7	29.4	2.9	0.0
Their off-farm vs. farming interests	100.0	2.9	14.8	11.8	35.3	17.6	11.8	2.9	2.9
How closely their interest coincide with yours	100.0	47.1	8.8	8.8	29.4	5.9	0.0	0.0	0.0
Their physical ability to do the necessary farm work	100.0	14.7	17.6	2.9	29.5	11.8	20.6	0.0	2.9
Whether they were interested in increasing their farm income or not	100.0	2.9	0.0	5.9	23.5	38.3	29.4	0.0	0.0
Your estimate of their prospects for increasing farm income	100.0	5.9	5.9	8.8	38.3	23.5	14.7	0.0	2.9
Personal acquaintance with the prospective client	100.0	58.9	17.6	8.8	5.9	5.9	2.9	0.0	0.0

two extension subject matter specialists (farm management and home resource management) and fellow education assistant colleagues meet to discuss client problems. These provide mechanisms for selectively obtaining University based information that could be used by farm families known to have specific informational needs. At the same time these weekly sessions are used to help education assistants obtain information about farm enterprises likely to be in demand on small farmer farms.

5. THE PARAPROFESSIONAL AS COMMUNICATORS (Reducing the Communication Gap Between Educator and the Small Farmer)

Paraprofessionals are part professionals and part the type of people who are to educated, or more properly interacted with. The combination in this case was part farm advisor and part small farmer. The name designation assigned was education assistant. Each normally worked with 40 or 50 clients mostly on a one-to-one basis.

Our major concern centered about their capability to operate as effective intermediaries between farmers on the one hand and the university informational resource system, on the other. We are accordingly look first at the personal qualities of the education assistants that either have a bearing on or which are indicative of this capability and second at how they actually operated as linkers.

Their Personal Qualities and Attributes

Of central concern here are:

(1) the homophily-heterophily (being alike or different) qualities of education assistants compared to their clients,
(2) their views about big-little farmer differences, and
(3) the reference groups that influence their behavior.

First we take note of the homophilous qualities that are assumed to enhance information flow and desired results. Although homophily (being alike) increases communication accuracy and ease of interpersonal communication there must be some differences (heterophily) between the farm advisor and the farmer for information flow to occur. Rogers and Bhowmik (1970) suggest that the best combination is for farm advisors and farmers to be homophilous (alike) on all personal qualities except for the information they possess.

This is the basic consideration in employing paraprofessionals to serve as linkers between farmers in their own social system, on the one hand, and researchers and extension specialists in the information and development system, on the other. In addition to being from the same general geographic area in which they work and thus cognizant of conditions that exist there, all of the education assistants in the Missouri program had been farmers and over 85 percent still were. Aside from the homophily issue some role combinations for farm advisement are functional (work well) and some are not dysfunctional (don't work

well). The one that seems to be universally and cross-culturally functional is the farmer-farm advisement combination. Being 94 percent male in number and roughly three fourths between the ages of 39 and 50, they approximated the characteristics of their clients in yet two additional respects. With an average of 12 years schooling completed, their educational level was probably not greatly different from that of their clients.

But there is the additional matter of what conditions are and what clients perceive them to be. They are usually different. Since most people are not good enough actors to hide even offending parts of self, let alone their total self (Patton and Giffin, 1974, 9) even if they try and since communication occurs at least equally through channels other than the planned message (Patton and Griffin, 1974, 157-181), what one perceives oneself to be becomes very important. This is particularly true in situations where communication is intimate, interactive (each in turn talks and the other really listens) and face-to-face as in the education assistant-small farmer relationships that prevail in the Missouri Small Farm Family Program.

Just as 97 percent of the education assistants believe that the clients think of themselves as small farmers, a very sizeable (82.4 percent) likewise regard themselves as being small farmers. Thus they identify closely with them. No doubt this is one reason why such a high percentage of the education assistants said they enjoyed associating with their small farmer clients, understood and sympathized with their problems, and felt very much at home working with them. (See Table 2)

Another type of perceptual variable indicative of interface potential are rewards that education assistants perceive as coming from their work. Two thirds worked more than 40 hours per week even though they didn't have to and got no overtime pay. Eighty-five percent work evenings and 73.5 percent weekends. No wonder supervisors often said that education assistants are grossly underpaid for what they do.

What then are the rewards that sustain them in their work? As it may quite generally be in extension (Lionberger and Reddy, 1976; Lionberger and Cheng, 1980), satisfaction that comes from helping people with their problems may be the chief motivator. Thus from Table 3 we see that education assistants put "Pleasure you get from helping others" at the top of the list. Second on the strong plus list was "Chance to learn while you work" and third "The importance that education assistants attached to their work." Lowest on the plus list was "the money you made". "The job that it may lead to" rated almost as low. Thus pay and upward mobility were not important motivating forces in this situation. Now from qualities that may be expected to enhance communicative effectiveness, we turn to what education assistants did on the job (role performance).

Work in the Field

Role Performance.—The average number of farmers with which education assistants worked was 44. Although only 40 hours per week was prescribed, 68

TABLE 2. EDUCATION ASSISTANTS CLASSIFIED BY VALUES HELD ABOUT THEIR RELATIONSHIPS WITH SMALL FARMERS

View Statements	Amount of Agreement						
	Total % (n=34)	Strongly Disagree %	Somewhat Disagree %	Neutral %	Somewhat Agree %	Strongly Agree %	No Answer %
We understand each other very well	100.0	0.0	2.9	8.8	61.8	23.5	3.0
I understand and sympathize with their problems	100.0	0.0	0.0	2.9	29.4	64.8	2.9
They think I understand and appreciate their problems	100.0	0.0	0.0	0.0	67.7	29.4	2.9
I feel very much at home working with them	100.0	2.9	2.9	5.9	17.6	67.7	3.0
They trust me	100.0	2.9	0.0	5.9	50.1	38.2	2.9
They respect the university and the cooperative extension service	100.0	2.9	0.0	8.8	50.0	32.4	5.9
I feel I am one of them	100.0	2.9	0.0	11.8	26.5	55.9	2.9
We enjoy our association with each other	100.0	2.9	0.0	0.0	17.6	76.5	2.9
I have become their most trusted source of farm information	100.0	0.0	0.0	26.5	52.9	20.6	0.0

TABLE 3. EDUCATION ASSISTANTS CLASSIFIED BY IMPORTANCE ATTACHED TO SOURCES OF JOB MOTIVIATION

Sources of Job Motivation	Importance Attached					
	Total % (n=34)	Negative consider-ation %	Neither plus or minus %	Moderate plus %	Strong plus %	No Answer %
The money you make	100.0	35.3	47.1	14.7	2.9	0.0
The job it may lead to	100.0	32.4	44.1	23.5	0.0	0.0
Pleasure you get in helping others	100.0	0.0	2.9	20.6	70.6	5.9
Chance to learn while you work	100.0	0.0	2.9	29.4	64.8	2,9
Expressions of appreciation from the people with whom you work	100.0	0.0	8.9	44.1	44.1	2.9
The importance you attach to the work	100.0	0.0	0.0	41.2	55.9	2.9
The importance you think others attach to your work	100.0	0.0	11.8	67.6	17.7	2.9
The kind of people you are associated with, all types considered	100.0	0.0	26.5	41.2	29.4	2.9

percent worked more than that amount and 85 percent worked evenings. Their relationship with clients was personal, intimate, interactive and with insight for the feelings of each other. The activity stressed very much by the highest percentage (82.4) was visiting and listening to their clients (See Table 4). Second in order was making them aware of regular extension resources and government agency resources available to them. Third and very much stressed by 61.8 percent was noticing and expressing recognition for client achievements. The emphasis on personal attention extended to encouraging clients to make personal telephone calls to the education assistants' home if and as needed. Also much or very much emphasis was placed on trying to get the family involved in setting goals and considering alternatives (85.3%) and encouraging clients to visit with and talk to each other.

Such personalized services as helping clients get credit if and as needed and either teaching of or providing skills needed took precedence over use of mass media channels.

Educational Methods Emphasized

In regard to what they see as being high on the list of what they do to help small farmers achieve their goals, a number of things emerge as very important. The specific question referring to 9 commonly used "assists" was "How important or unimportant do you regard each of the following in your efforts to help small farmers achieve their goals?" Although close personal involvement with clients got the most very much votes (64.7 percent) several were in the 50 percent or more range, often with many more additional rating the "assists' as of much importance (See Table 5). These in their descending order on the very much vote were "Answers you help them find," "Publications from the university" and "The information you give them directly."

The two highest on the "much" listing were the thinking-planning induced as a result of the education assistant's involvement with them (52.9 percent) and the help given them in either finding resources they didn't know about or didn't know how to get if they knew about them (52.9 percent).

Problems Encountered. Finally, in regard to problems encountered by the education assistants by far the most frequently reported "continual or very frequent" problem was finding people at home. Over 29 percent gave this response (See Table 6). Next in order at this magnitude level was personal problems of clients (14.7 percent).

In the "often-sometimes" range difficulties reported were heavily lodged in the information base from which education assistants operated. This included both information suited to small farmer needs and that needed by the education assistants themselves. Lack of time, deficiencies in own knowledge on how to motivate and work with people and lack of concern on the part of clients completed the list of "often or sometimes" reported difficulties.

Lack of support from the regular extension staff was placed in the "no problem" category by 91.2 percent of the education assistants and in the

TABLE 4. EDUCATION ASSISTANTS CLASSIFIED BY RELATIVE EMPHASIS PLACED ON DESIGNATED EDUCATIONAL STRATEGIES FOR WORKING WITH SMALL FARMERS

Educational Strategies	Amount of Stress Given						
	Total % (n=34)	Avoid Doing %	Very Little %	Some %	Much %	Very Much %	No Answer %
Provide them with educational material mostly from the university	100.0	0.0	0.0	5.9	44.1	50.0	0.0
Encourage personal or telephone calls at/to your home	100.0	0.0	2.9	29.4	35.3	32.4	0.0
Teach skills or give help where a particular skill is lacking or deficient	100.0	0.0	0.0	23.5	47.1	29.4	0.0
Help them get needed credit, materials and/or supplies	100.0	5.9	23.5	29.4	26.5	14.7	0.0
Help them with their personal problems either directly or through referral	100.0	2.9	23.5	44.1	11.8	17.7	0.0
Work with them in group meetings	100.0	0.0	29.4	41.3	23.5	2.9	2.9
Try to get family involvement in setting goals and considering alternatives	100.0	0.0	0.0	11.8	47.1	38.2	2.9
Encourage clients to visit and/or talk with each other	100.0	0.0	11.8	23.5	41.2	23.5	0.0
Notice and express recognition for their achievements	100.0	0.0	0.0	5.8	32.4	61.8	0.0
Conduct demonstrations, tours, field days, etc.	100.0	0.0	29.4	38.2	20.6	11.8	0.0
Use radio, news letters and/or releases from the local press	100.0	0.0	29.4	41.2	14.7	14.7	0.0
Make them aware of the help they can get through the Extension Service, ASC, SCS, FHA offices and the like	100.0	0.0	0.0	5.9	26.5	67.7	0.0
Help them make contacts with agencies from which they can get the help they need	100.0	0.0	0.0	11.8	44.1	44.1	0.0
Visit with and listen to what they have to say	100.0	0.0	0.0	0.0	14.7	82.4	2.9

TABLE 5. EDUCATION ASSISTANTS CLASSIFIED BY AMOUNT OF IMPORTANCE THEY PLACE ON SELECTED EDUCATIONAL ASSISTS FOR WORKING WITH SMALL FARMERS

Educational Assists	Amount of Perceived Importance							
	Total % (n=34)	Negative %	None %	Little %	Some %	Much %	Very Much %	No Answer %
Publications from the university	100.0	0.0	0.0	0.0	8.8	35.3	55.9	0.0
Close personal involvement with clients	100.0	0.0	0.0	2.9	8.8	23.6	64.7	0.0
Recognition expressed for successes achieved by clients	100.0	0.0	0.0	2.9	26.5	26.5	44.1	0.0
Special attention clients get	100.0	0.0	0.0	2.9	26.5	35.3	32.4	2.9
The information you give them directly	100.0	0.0	0.0	0.0	11.8	38.2	50.0	0.0
The answers you help them find	100.0	0.0	0.0	0.0	8.8	26.5	58.8	5.9
Finding resources for help they either didn't know was available or they didn't know how to get	100.0	0.0	0.0	0.0	5.9	52.9	41.2	0.0
The thinking-planning induced as a result of your involvement with them	100.0	0.0	0.0	5.9	11.8	52.9	29.4	0.0
The idea exchange generated among the clients, i.e., what they learn from each other	100.0	0.0	0.0	5.9	44.1	41.2	8.8	0.0

TABLE 6. EDUCATION ASSISTANTS CLASSIFIED BY ESTIMATED FREQUENCY WITH WHICH SELECTED CONSTRAINTS OPERATE IN THEIR WORK WITH SMALL FARMERS

Constraint on Working with Small Farmers	Estimated Frequency of Occurrence						
	Total % (n=34)	Never %	Some-times %	Often %	Very Often %	Con-tinual %	No Answer %
Lack of information suited to small farmer needs	100.0	26.5	55.9	17.6	0.0	0.0	0.0
Inadequate method or means of getting information to farmers	100.0	52.9	44.2	0.0	2.9	0.0	0.0
Finding people at home	100.0	5.9	38.2	26.5	26.5	2.9	0.0
Own knowledge of how to motivate and work with people	100.0	29.4	50.1	14.7	2.9	0.0	2.9
Lack of interest and concern on the part of clients	100.0	14.7	61.8	23.5	0.0	0.0	0.0
Lack of time to get the needed work done	100.0	26.5	41.2	26.5	5.8	0.0	0.0
Own knowledge about questions farmers ask	100.0	17.6	64.7	14.8	0.0	0.0	2.9
Lack of guidance on how to proceed	100.0	50.0	47.1	0.0	0.0	0.0	2.9
Personal problems of clients	100.0	20.6	50.0	14.7	8.8	5.9	0.0
Lack of local support for the program	100.0	58.8	32.4	5.9	2.9	0.0	0.0
Lack of support from the regular extension staff	100.0	91.2	8.8	0.0	0.0	0.0	0.0
Local self interests that stand in the way	100.0	76.5	20.6	2.9	0.0	0.0	0.0
Lack of good information materials for the farmer himself to use	100.0	55.9	38.2	5.9	0.0	0.0	0.0

"sometimes" category by the remainder. However, lack of local support for the program and local self interests that stand in the way were sometimes cited as problems.

Linkages with the University Resource System

The second part of the linking arrangement for education assistants is with the university resource system largely represented by area subject matter specialists serving as intermediaries and with other informational sources not associated with the university.

Contacts with Area Subject Matter Specialists. As can be seen from Table 7 the greatest number of in-field contacts were with farm management specialists (5.56 per month average). This suggests that consultations were more frequent than the regularly scheduled weekly meetings. Contacts with livestock specialists ranked second (3.65) and with agronomy specialists third (3.00). Fourth in line were the designated family resource specialists. With interaction among other education assistants also frequent, it was apparent that contacts were not restricted by official prescription. Rather, the education assistants acted in a flexible way and in accord with the nature of the help needed.

Although getting information and advice from subject matter specialists predominated as the main purpose of contact, "talk things over" was marked with sufficient frequency to indicate that the relationship was also interactive. Furthermore, relationships with district subject matter specialists were assigned high marks by the education assistants on qualities that make for effective working relationships on a 7-point semantic differential scale (Snider and Osgood, 1969) of paired adjectives representing extremes for qualities on each scale. The average ratings assigned were in the top category for friendliness, helpfulness, being supportive of the Missouri Small Farm Family Program, being considerate, cooperative and understanding, and offering encouragement to education assistants in their work. In addition subject matter specialists saw education assistants as generally complementing their own work rather than as competitors. Education assistants expected answers to their technical questions or searches leading to answers quickly and generally got them. Ninety-one to 94 percent expected prompt treatment of requests, for farm visits, if and as needed and that specialists listen to their problems and give suggestions on how to proceed. From 79 to 82 percent obtained what they expected. In a number of cases they obtained more services than they actually requested (See Table 8). In making information requests to an intermediary there is always a question of whether answers will be relayed back through the education assistant or directly to the client. The last seems to have been the rule in the Small Farm Family Program both in regard to expectations and practice. Less help was expected and received for proposing solutions to personal problems of small farmers.

Attention up to now has focused in the acquisition of information from area subject matter specialists. But there were many other sources also.

Other Informational Contacts and Linkages. An inventory of what they were,

TABLE 7. EDUCATION ASSISTANTS CLASSIFIED BY NUMBER OF CONTACTS PER MONTH WITH DESIGNATED PERSONNEL IN THE DISTRICT

Kind of Personnel	Number of Contacts							
	Total	0	1-3	4-7	8-11	12-15	16 & over	Average
Area directors	34	23	5	4	1	0	1	1.41
Farm management specialists	34	6	6	9	8	3	2	5.56
Agronomy specialists	34	7	15	7	3	2	0	3.00
Agricultural engineering specialists	34	25	6	2	1	0	0	0.82
Livestock specialists	34	6	16	6	2	3	1	3.65
Horticulatural specialists	34	32	2	0	0	0	0	0.19
Dairy specialists	34	29	5	0	0	0	0	0.29
Home resource management specialits	34	17	7	6	3	1	0	1.94
Food and nutrition specialists	34	30	1	1	1	0	1	0.85
Cloth and textile specialists	34	32	2	0	0	0	0	0.12
Youth specialists	34	30	1	3	0	0	0	0.44
Industrial and labor specialists	34	31	1	2	0	0	0	0.29
Government specialists	34	33	0	1	0	0	0	0.11
Other education assistants	34	0	4	4	12	6	8	10.59
Secretaries	34	7	3	12	9	1	2	5.15

the regularity with which they were used and of their perceived utility are enumerated in Table 9. From this, the prime importance of the area farm management specialist was again exemplified and by comparison the secondary role of other subject matter specialists. The last were generally only occasionally consulted. The occasional and regular use of on campus faculty as sources of information was congruent with the contention of many (70.6 percent) who said they felt that they could go directly to them rather than through official channels. Over three fourths (76.5 percent) in fact indicated they had done so.

Most commonly used channels for regularly getting information from the university resource system were college of agriculture publications (94.1 percent), Agricultural Guide Sheets (88.2 percent) and Small Farmer Guide sheets (76.5%).[2] Further examination of Table 9 will also show a high proportion making occasional or regular use of newsletters, government agencies, farm magazines, commercial channels, Home Economics Guide Sheets, telephone calls and leading farmers in the area.

TABLE 8. EDUCATION ASSISTANTS CLASSIFIED BY SERVICES EXPECTED, REQUESTED, AND OBTAINED FROM DISTRICT SUBJECT MATTER SPECIALISTS

Services That District Subject Matter Specialists Could Render	Whether Expected*		Whether Requested*		Whether Obtained*	
	Yes %	No %	Yes %	No %	Yes %	No %
Answers to your technical questions-- or searches leading to same	94.1	0.0	76.5	2.9	91.2	0.0
Prompt treatment of requests	94.1	0.0	73.5	5.9	82.4	2.9
On farm visits, if needed	91.2	2.9	67.6	11.8	79.4	2.9
Answers to technical questions on behalf of your clients	82.4	8.8	70.6	8.8	82.4	8.8
Communicate answers to questions directly to the client	67.6	20.6	67.6	14.7	67.6	17.6
Help demonstrate complex practices or procedures	85.3	2.9	61.8	17.6	67.6	8.8
Find solutions to personal problems	38.2	41.2	29.4	38.2	26.5	38.2
Listen to your field problems and give suggestions on how to proceed	91.2	0.0	79.4	2.9	82.4	0.0

*Percentages do not include those who failed to answer questions posed.

TABLE 9. EDUCATION ASSISTANTS CLASSIFIED BY REGULARITY OF INFORMATION SOURCES AND CHANNELS USED AND OWN ESTIMATE OF THEIR UTILITY

	Regularity of Use*				Estimated Utility*			
	Never %	Seldom %	Occasionally %	Regularly %	None %	Some %	Very %	Indispensable %
Sources								
Area farm management specialists	0.0	0.0	20.6	73.5	0.0	8.8	58.8	26.5
Area home economist	0.0	5.9	64.7	26.5	0.0	29.4	50.0	17.6
Area youth specialist	20.6	32.4	41.2	5.9	14.7	32.4	44.1	2.9
Other agricultural area specialists in technical agriculture, e.g. livestock, agronomy, engineering, entomology, etc.	0.0	0.0	61.8	32.4	0.0	8.8	47.1	29.4
Other area specialist (not in technical agriculture)	8.8	50.0	26.5	5.9	5.9	55.9	20.6	0.0
Other educational assistants	0.0	20.6	41.2	32.4	0.0	32.4	55.9	0.0
Government agencies, state, and/or federal	0.0	26.5	44.1	29.4	0.0	41.2	47.1	5.9
Small farmers with whom you work	2.9	14.7	47.1	35.3	5.9	38.2	35.3	14.7
Leading farmers in the area	2.9	14.7	61.8	20.6	5.9	35.3	38.2	14.7
Specialists at one or more of University of Missouri campuses	11.8	0.0	61.8	14.7	0.0	11.8	55.9	8.8

TABLE 9. Continued

	Regularity of Use*				Estimated Utility*			
	Never %	Seldom %	Occasionally %	Regularly %	None %	Some %	Very %	Indispensable %
Channels								
University (College of Agr.) publications	0.0	2.9	2.9	94.1	0.0	11.8	32.4	50.0
Agricultural Guidesheets	0.0	0.0	8.8	88.2	2.9	8.8	41.2	38.2
Special Reports	0.0	0.0	35.3	61.8	2.9	17.6	47.1	23.5
Small Farm Guidesheet	0.0	0.0	20.6	76.5	2.9	8.8	38.2	38.2
Home Economics Guide series	0.0	11.8	35.3	52.9	5.9	23.5	44.1	20.6
Telephone calls	14.7	2.9	44.1	14.7	2.9	11.8	38.2	2.9
Personal face-to-face	8.8	8.8	52.9	11.8	2.9	8.8	50.0	5.9
Side band radio	44.1	0.0	5.9	5.9	14.7	8.8	8.8	0.0
CB radio	50.0	0.0	2.9	5.9	17.6	8.8	5.9	0.0
Cassettes	14.7	2.9	17.6	35.3	2.9	26.5	32.4	2.9
Newsletter	2.9	11.8	11.8	55.9	0.0	11.8	64.7	5.9
Missouri Farm News service	16.7	2.9	20.6	8.8	5.9	20.6	17.6	5.9
Farm magazine	5.9	14.7	47.1	32.4	5.9	50.0	38.2	0.0
Materials from private industry and/or business	14.7	32.4	50.0	12.9	17.6	55.9	17.6	5.9
Local small farmer newsletter	5.9	17.6	29.4	32.4	5.9	26.5	29.4	8.8
Local newspaper	5.9	29.4	38.2	23.5	5.9	55.9	23.5	2.9

*Percentages do not include those who failed to answer questions posed.

The estimated utility of these sources and channels for providing for the informational needs of education assistants closely parallelled the magnitude of regular use. Thus subject matter specialists stationed in the area and university publications of a variety of types rated very high on the utility estimate. In fact, the one with the highest "indispensable" designation was College of Agriculture publications generally. Agricultural Guide Sheets and Small Farmer Guide Sheets were next in order with 38.2 percent indicating that each was indispensable. This with many others rating each as very important clearly exemplified their central importance as information sources. These printed documents provided references for ready repeated use.

6. PARAPROFESSIONAL'S PERCEPTION OF THEIR LINKING ASSIGNMENT

Some perceptual considerations likely to affect the way education assistants (paraprofessionals) operate in the field are:

1. Their perception of how small farmers differ from the larger ones in terms of educational methods required to supply them with university based information.
2. Their reference group identification.

Others

1. The support they think various segments of the public accord to the Small Farmer Family Program.
2. Their opinions about program achievements.

These will be noted and discussed in succession.

Views about Appropriate Educational Methods for Reaching Small Farmers

Nearly 80 percent of the education assistants thought more on-farm personal contacts were needed for working with small farmers. (See Table 10). Almost as many said more work with clients as families (76.5%) and 67.6 percent said more help with getting services and supplies were needed. On several other help activities they thought the need was much the same and for one - doing things for which skills are lacking - a sizeable number (17.7 percent) thought avoidance should be the rule. For use of a written educational materials the preponderant view was about the same amount of effort was needed. Thus, the general reaction was one of more intensive work on a person-to-person basis with small farmers than large ones, with this help also to include concern with personal problems.

Perceived Reference Group Influence

Education assistants operate between two social systems - that of the small farmer and that of the university. They can identify and defer to either or both. But the direction of their major deference has a bearing on how they work in the

TABLE 10. EDUCATION ASSISTANTS CLASSIFIED BY AMOUNT OF EMPHASIS RECOMMENDED ON DESIGNATED EDUCATIONAL STRATEGIES FOR WORKING WITH SMALL FARMERS COMPARED TO LARGE FARMERS

Educational Strategies	Amount of Emphasis Compared to Working with Large Farmers					
	Total % (n=34)	Less %	More %	About Same %	Don't Use At All %	No Answer %
On-farm personal contacts	100.0	0.0	79.4	17.7	0.0	2.9
Use of written educational materials	100.0	2.9	29.5	67.6	0.0	0.0
Helping with their personal problems	100.0	5.9	38.2	41.2	8.8	5.9
Doing things for them for which they lack skills-like filling out government forms and vaccinating cattle	100.0	2.9	38.2	41.2	17.7	0.0
Help them get the credit, services and supplies they need to achieve their goals	100.0	0.0	67.6	29.5	2.9	0.0
Working with them in groups	100.0	2.9	47.1	47.1	0.0	2.9
Personal (one-to-one) contacts	100.0	0.0	55.9	44.1	0.0	0.0
Working with clients as families	100.0	0.0	76.5	23.5	0.0	0.0

field and for whom. Research indicates that those who defer to clients more than to program administrators do the best job in the field (Dubey and Gallup, 1962; Preiss, 1954). This becomes even more relevant in cases where potential users and program administrators have different ideas about what the local educational program should be and what the local representatives should do.

An indication of the deference inclinations of the education assistants was obtained by asking them to indicate on a 5 point "none-to-very much" scale how much they thought their work was influenced by selected position incumbents to whom they were expected to relate in their own extension related position. These included the area director, farm management specialists, small and influential farmers in the area, other education assistants and the county courts, the last of which has a determining influence on local program finances. It is neither surprising nor discouraging that most influence is attributed to farm management specialists (58.9 much or very much) because of the closeness with which they work with them, including the weekly joint sessions in which specific small farmer problems encountered in the field are addressed (See Table 11). But next highest "much or very much" influence mentions went to the small farmers with whom they work (38.3 percent). It will also be recalled that 82.4 percent of the education assistants regarded themselves as being small farmers. Least influence is presumed to come from the county courts which are little concerned with day to day operations of the Small Farm Family Program and from influential farmers in the community few of whom were directly associated with the Program. As might be expected they were considerably influenced by fellow education assistants with whom they interact frequently.

Views about Public Support for the Program

The Small Farm Family Program must compete with other worthy causes for public financial support. Since it differentially benefits a segment of the population with comparatively less political influence, it is especially vulnerable to the consequences of an unfavorable climate of public opinion, especially the opinion of those in power positions. An assessment of how the various publics feel about the program is therefore important. However, the ideal of asking each how they felt, had to defer in the study of how favorably disposed the education assistants thought their extension colleagues and various publics were to the program. Their responses calibrated on a 5 point very unfavorable to very favorable scale are recorded in Table 12.

From these it is apparent that they saw the extension organization itself and their colleagues as either favorable or very favorable. These included colleagues not assigned to the Small Farm Family Program and the extension councils, both area and county. Only 2.9 percent saw their area councils as very unfavorable.

County courts more removed from the extension activity and of necessity concerned with a diversity of other matters were seen as less supportive. Although a majority viewed county courts as favorable to the program, 41.2 percent saw them as indifferent.

TABLE 11. EDUCATION ASSISTANTS CLASSIFIED BY AMOUNT OF INFLUENCE THEY THOUGHT DESIGNATED REFERENTS HAD ON THEIR WORK

Designated Referents	Amount of Perceived Influence							
	Total % (n=34)	Least %	None %	Little %	Some %	Much %	Very Much %	No Answer %
Area Director	100.0	5.9	5.8	23.5	32.4	32.4	0.0	0.0
Farm management specialists	100.0	0.0	0.0	14.7	23.5	47.1	11.8	2.9
The small farmers with whom you work	100.0	0.0	2.9	20.6	35.3	26.5	11.8	2.9
Influential farmers in the area, big and small	100.0	0.0	23.5	32.4	38.3	2.9	0.0	2.9
Fellow education assistants	100.0	0.0	5.9	17.6	41.2	29.4	5.9	0.0
County court	100.0	11.8	32.4	23.5	29.4	2.9	0.0	0.0

TABLE 12. EDUCATION ASSISTANTS CLASSIFIED BY PERCEIVED REACTION TO THE MISSOURI SMALL FARMER PROGRAM OF SELECTED REFERENTS

Referents	Perceived Reaction					
	Very Favorable	Favorable	Indifferent or mixed	Unfavorable	Very Unfavorable	No Answer
County extension councils	29.4	58.8	5.9	0.0	5.9	0.0
Area extension councils	26.5	52.9	5.9	0.0	2.9	11.8
County court	11.8	41.2	41.2	0.0	2.9	2.9
Big farmers	5.9	41.2	41.2	8.8	0.0	2.9
Small farmers	35.3	38.2	2.9	20.6	0.0	2.9
Local businessmen	17.6	47.1	28.5	5.9	2.9	2.9
Local newspaper	11.8	44.1	32.4	2.9	5.9	2.9
Extension colleagues not assigned to small farm programs	14.7	64.7	14.7	0.0	2.9	2.9
Local banks	17.6	47.1	17.6	2.9	0.0	2.9

Paradoxically small farmers themselves were seen as the public most divided about the utility of the program. Thirty five percent plus of the education assistants saw small farmers as very favorable but 20.6 percent also saw them as generally unfavorable. Both represented the highest percentage in these two categories for any of the publics.

The perceived negative evaluation attributed to the county courts and small farmers were not assigned by a few generally negative education assistants nor was it a localized phenomenon. Perhaps it is only natural that farmers directly affected by the program would have the strongest opinions about it. Education assistants in close contact with them would be expected to perceive well what these views are.

Although 17.6 percent saw banks as mixed in favorability the great majority saw them as either favorable or very favorable. The business community and newspapers were also seen as favorable in much the same proportion. However, 5.9 percent of the education assistants saw newspapers generally as very unfavorable.

Thus it is that with few exceptions education assistants saw their program getting strong support from their own extension colleagues, the extension organization and from most publics. Although two powerful publics, namely big farmers and the county courts, were seen as mostly favorable, sizeable contingents of education assistants also saw them as indifferent or mixed in their feelings. Finally, in view of the education assistants' commitment to the program and their heavy involvement in it, a favorable bias toward it might be expected. Even barring some error in that direction, a general climate of favorable opinion to the program may be assumed to prevail.

Perception of Program Effects

Aside from increasing the farm income of the clients, an end to which the program is heavily directed and in some sense misdirected, a central goal is to "graduate" the small farmer and in so doing get them habituated to using regular extension channels. Graduation also implies development of an ability to independently manage own affairs and a greatly reduced dependency relationships between paraprofessionals and individual farmers.

Again as with perceived acceptance of the program by various publics, program results are judged in terms of changes that education assistants thought they saw in their small farmer clients during the two or more years they had worked with them. Each was asked to indicate selected behavioral and attitudinal changes that they thought had occurred in the small farmers. These were changes that were assumed to accrue at least in part from the program effort. Their responses are reported in Table 13. Areas where most thought they saw much change in the positive direction were "interested in improving own situation" (58.8 percent) and "Improved self confidence" (41.2 percent). Also 35.3 percent of them saw a much greater inclination to make more use of regular extension channels.

TABLE 13. EDUCATION ASSISTANTS CLASSIFIED BY AMOUNT OF CHANGE IN DESIGNATED AREAS THEY PERCEIVE AS HAVING TAKEN PLACE IN THEIR CLIENTS

Areas	Total %* (n=34)	Now Compared to the Past		
		No Change %	A little More %	Much More %
Use of regular extension channels	100.0	0.0	41.2	35.3
Initiative in sizing up and solving own problems	100.0	2.9	55.9	17.6
Ability to make own decision	100.0	5.9	55.9	14.7
Husband-wife involvement in decision making	100.0	8.8	55.9	8.8
Interest in improving own situation	100.0	0.0	17.6	58.8
Self confidence	100.0	0.0	32.4	41.2
Involvement in community activities	100.0	2.9	52.9	5.9

*Unknowns excluded from the 100 percent total

For other matters they saw small changes in the desired direction, i.e., in taking the initiative in sizing up and solving own problems, increased ability to make their own decisions, more husband-wife involvement in decision making and more involvement in community activities. All are important prerequisites to improving their own life chances as farmers.

SUMMARY AND CONCLUSIONS

Bridging the Communication Gap Between Education Assistants and Farmers

Education assistants in the Missouri Small Farm Family Program were homophilous (alike) with small farmers in perhaps the most essential respects for effective communication and the exercise of personal influence in their adviser-client relationships. All had once been farmers; 85.3 percent still were. Of the last 88.2 percent thought of themselves as being a small farmer. Probably of all role combinations conducive to accurate communication and high credibility the farmer-farm advisor is it.

The education assistant's relationship with small farmers were empathetic, interactive and highly satisfying. Personal satisfactions received from helping clients with their problems provided the strongest reward that education assistants obtained from their work. Second in order was the opportunity that the position provided to learn while they worked. This was certainly a combination conducive to rendering effective help to clients.

Their work with clients, mostly personal and interactive, carried very strong components of listening to what the small farmers had to say, taking note of and expressing recognition of their achievements. Thus in addition to addressing agricultural production problems and servicing informational needs they served therapeutic, ego enhancing roles also. They accordingly did what so many "so-called" experts seem incapable of doing. They listened. Another very important role highly stressed was that of making clients aware of help that they could get through regular extension channels and other government agencies. This is an important service where small operators have become disassociated from support services otherwise available to them.

All things considered the manner in which education assistants worked with clients was conducive to increasing their self confidence, use of regular informational channels and management ability. It is also conducive to forming strong personal attachments. These are likely to be difficult and painful for both to break.

Meeting the Functional Requirements for Information Generation and Use

In terms of the functional requirements for information development and exchange along the theory-to-use continuum, information generation (the innovation function) remains basically the responsibility of the Agricultural

Experiment Station and related agencies that also provide information that small farmers might find useful for delivery to them (the dissemination function). This activity remains basically the province of the extension service and the interpersonal network of farmers which is activated by personal contacts of university representatives with them.

Validation of information in terms of user needs is mostly done by the research branch of the system. However, it was generally performed without regard to big farmer - little farmer consequences.

But less characteristic of usual extension methods and channels of communication, is for farmers, subject matter specialists and extension workers to become involved also in performing the integration function. This is achieved first through interactive exchanges among subject matter specialists and education assistants in regularly scheduled meetings which deal with the small farmers and probably also through intensive one-on-one contacts with farm families for helping them put inputs from diverse sources together into appropriate combinations for achieving their goals.

The Information Supply Network

Although the information and technology available via the university resource system were surely much better suited to big than little farmers, the weekly meetings of education assistants and the two subject matter specialists—farm management and home resource management—provided an interactive arrangement for selecting and to some degree adapting what was immediately available or could be made available through the information supply system to meet the special needs of the small farmer clients both collectively and individually. In this sense both subject matter specialists and education assistants were involved in performing the integrating function on behalf of their clients (Lionberger, 1974).

Linkages to the university resource system were many, varied and regularly used. At the most important juncture in the information delivery-feedback sequence, namely, between the in-field subject matter specialists and education assistants, the relationship was interactive. This allowed a questioning, selecting, adapting, fitting into local needs process, approaching the ideal for effective information flow. College of Agriculture publications, especially the continually updated agricultural Guide Sheets, and the specially prepared Small Farmer Guide sheets were also extensively used in this context.

The personal informational servicing relationships crucial to the operation of the program even extended to the campus based faculty specialists. Some education assistants made regular use of the campus based staff and many did so occasionally. Although these relationships were probably initially formed via official channels most said they would have no hesitancy to recontact them directly, if and as needed.

Inter system linkages for getting and giving information by education assistants extended beyond the university informational resource system and its

in-field specialists. Informational inputs also came from a variety of agricultural agencies, commercial sources and farmers, both big and little.

Education assistants were more influenced by farm management specialists, under whose direction they worked, than any one else. But they were also strongly influenced by small farmers with whom they worked and their fellow education assistants with whom they interacted frequently. Although home management resource inputs were officially provided in the program, the informational servicing relationships that education assistants used were heavily to the agricultural resource base.

Interactive Interfaces within the System

The interactive manner in which the information transfer and exchange process operates at the major between-system interfaces, i.e., between the education assistant and small farmer on the one hand and between education assistants and the subject matter specialists on the other, carried its own self correcting redirecting mechanism and a potential for governance at the local user level virtually necessary for servicing the informational needs of clients. Matters not understood could be detected, questioned and clarified. Also matters perceived to be wrong are likely to surface, be addressed and corrected to the extent that prescribed constraints will permit. Even the constraints are likely to be questioned and ultimately changed.

Reduction of felt differences between farmers and farm advisors is achieved by selecting education assistants as much like the farmers that they are to communicate with as possible except for the information they possess. This reduction of personal quality differences between the two to a minimum and the interactive, interpersonal exchange between the two makes easy and accurate communication possible.

Minimizing Inclinations to Increase the Gap Between Big and Little Farmers

Selective inclusion of clients into the program on the basis of being small by comparison (to others in the immediate locality) provides a mechanism that should help narrow the gap between big and little farmers rather than increasing it as the knowledge gap hypothesis holds. The definition of small as relative to those near by (peers) places being small in the context of where its consequences hurts most. However, it is important to note that selection of clients from the "small" contingent is still heavily in terms of their success potential. Thus, conditions are recreated for increasing differences between those who are very small and those who are somewhat larger.

Interests Included and Excluded

The program has a demonstration capability for addressing the needs of open country residents who are interested in increasing farm production. At the same time it tends to exclude those who have major interests other than production

agriculture. Of these there may be many (Lionberger, Smith and Holik, 1979). Addition of the home resource management and gardening aspects to the program in 1976 was one step in the direction of meeting these additional needs.

FOOTNOTE

[1] The guide Sheet series available in either single sheet or full volume form consists of 500 to 600 separate entries, usually no more than four pages in length, on subjects for which informational requests have already occurred or those on which requests are expected. The volume is available in printed indexed loose leaf notebook form. Entries are simply written and are addressed mostly to "how to do" what people habitually want to do in and around the house, on the home grounds and on the farm. New guide sheets are added as needed and old ones are revised and replaced as new information becomes available. For an example of the Guide Sheet format and one of a similar nature in the small farmer series see Appendix A.

[2] Significantly the 10 farm management specialists responsible for administering the Small Farm Family Program in each of the extension planning (administrative) areas generally shared the views about their relationships with small farmers and how much certain educational strategies should be stressed in working with them. But the in-field subject matter specialists who were only incidentally associated with the Program had devergent views. In general, they felt they had less sympathy and understanding of small farmer problems, felt less at home working with them and in general felt less affinity with them. (See Table 1, Appendix B)

Compared to the 10 farm management specialists, most responsible for the in-field programs, they saw less need for a heavy emphasis on:

a. Personal on-farm contacts
b. Helping small farmers with personal problems
c. Helping them find and/or obtain credit, services and supplies and
d. Working with them as families

Conversely those directly responsible saw less need for:

a. group work and
b. written materials See Table 2, Appendix B

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APPENDIX A

Exhibit 1 One publication in the Science and Technology GUIDE series, published by the Columbia Extension Division, University of Missouri

Pasture Weeds (Perennials)

L. E. Anderson
Agronomy Department
College of Agriculture

There are approximately 5,000,000 acres of native pasture scattered throughout Missouri. Productivity of this vast natural resource varies considerably and is due primarily to differences in management. Such differences include maintaining soil fertility and controlling undesirable vegetation in combination with a judicious grazing program. It is not uncommon to see once productive native pastures completely overgrown by brush and herbaceous weeds. Under such competition, desirable grasses become sparse and gradually disappear. Persistent overgrazing is the major factor contributing to the decline in pasture productivity. This publication is concerned primarily with some of the weeds that compete with desirable vegetation in native pastures.

Pasture weeds can be grouped in several different categories. These include:

1. Grasses or broadleaved weeds. There are several differences between these two general groups but leaf characteristics are most easily observed.
2. Length of life (longevity)
   a. Summer annual - The life cycle is completed during one growing season.
   b. Winter annual - Seedling is established during the fall. It then becomes dormant in winter, resumes growth in spring, matures seed and dies. It must go through a low-temperature dormancy period before changing from vegetative to reproductive growth.
   c. Biennial - Requires two growing seasons to complete life cycle and dies after maturing seed during second year.
   d. Perennial - Lives indefinitely. A perennial may be "simple" or "creeping" in root characteristics. A simple perennial develops a substantial tap root but does not spread laterally by underground structures. A creeping perennial may spread indefinitely by lateral root stocks that radiate out in all directions from the original plant.

Because of their long life, perennials are persistent and consequently are the most difficult group of weeds to control. Following are illustrations of several perennial weeds found in native pastures throughout Missouri.

Aster (Aster spp.)

Broomsedge (Andropogon virginicus)

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Exhibit 2 One publication in the "Information for Small Farm Operators' series.

Information for

SMALL FARM OPERATORS

from the University of Missouri-Columbia Extension Division

Dairying on Small Farms

Prepared By: W. W. Thomas and Ed Wiggins,
Department of Agricultural Economics, College of Agriculture;*
Fred Triplett, and Vernon Yazell, Small Farm Education Assistants

Almost every family farm once had several milk cows. The situation has changed, today only a few farms have dairy cows. There is a place for dairy cows on small farms, and profit, if you have the skills, labor, and facilities for dairying.

Dairying can be a major source of income on small farms when:

- There is an available market for your milk, and it can be hauled.
- The family likes to work with dairy cows and is willing to learn skills needed for doing a good job.
- Adequate family labor is available to handle cows and produce feed.
- Enough open land is available for the production of high quality pasture and hay.
- An adequate place to milk cows can be provided.

Quality Pasture is Important

Successful dairymen with small herds plan for and produce quality pasture for their cows.

Producing enough pasture and hay is necessary for good milk production. Keep your forage program ahead of cow numbers. Strive for eight months or more of pasture each year. This will require at least two to three acres of good pasture per cow. Methods of planting and growing grass can be found in Pamphlet SF/9, "Growing and Using Grass on Small Farms." Ask for a copy from your extension center. Inquire about other available information on pasture and hay.

*Acknowledgements: Authors express their appreciation to Ron Young and Fred Meinershagen, Dairy Department, College of Agriculture, for review of the material presented.

A well planned rotational grazing system will make better use of pasture. Low cost electric fences can be used to divide fields. The herd should not be left on any pasture longer than one to two weeks before moving to another pasture. Rotational grazing may cause problems in supplying water and shade to the herd as well as getting cows back to the milking parlor. If a dairy cow walks over ¼ mile to water, she will probably not drink enough water. This will reduce milk flow.

Until you have established enough acres of productive permanent pasture for the cows you may need to rely on fall seeded small grains and summer pasture containing sudan grass or lespedeza.

If you need temporary summer pasture use sudan grass or lespedeza. Certified sudan seed of the green leaf and piper varieties seeded on land free of volunteer sorghum or Johnsongrass offers the greatest protection against prussic acid poisoning. Gahi-1 variety of pearl millet also is a very productive summer pasture free from prussic acid; however, it contributes to a low butterfat content of milk. This is not to say that hybrid sudans and sorghum sudans have not been used for summer pasture, however, they carry a greater risk of prussic acid poisoning.

Whether you use sudan or one of the sudan-sorghum hybrids, start pasturing one or two animals and observe these closely for an hour or so before turning the herd on to the pasture. Should prussic acid poisoning occur it will be necessary to treat the animals within a few minutes to save them. Ask a veterinarian for advice on early treatment. Once cows have become used to pasturing sudan or sorghum sudan, death loss is highly unlikely unless the animals are removed from the pasture for a day or more. Animals not acclimated to grazing sudan or sorghums have been killed on pas-

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Appendix B Tables

TABLE 1 PERCENT OF SUBJECT MATTER SPECIALISTS ASSIGNED TO THE SMALL FARM FAMILY PROGRAM CLASSIFIED BY AGREEMENT OR DISAGREEMENT WITH SELECTED VIEWS ABOUT THEIR RELATIONSHIPS

Views about Relationships - Extent of Specialists Commitment to the Program	Percent of Disagreement - Agreement						
	Total	Strongly disagree	Disagree somewhat	Neutral	Somewhat agree	Agree strongly	NA
We understand each other very well							
Responsible	100.0*	0.0	0.0	20.0	60.0	20.0	0.0
Incidentally associated	100.0**	2.0	2.0	26.5	38.9	20.4	10.2
Understand and sympathize with their problems							
Responsible	100.0*	0.0	0.0	0.0	30.0	70.0	0.0
Incidentally associated	100.0**	0.0	0.0	12.2	32.7	44.9	10.2
They think I understand and appreciate their problems							
Responsible	100.0*	0.0	20.0	0.0	60.0	20.0	0.0
Incidentally associated	100.0**	0.0	0.0	16.3	57.2	16.3	10.2
Feel very much at home working with them							
Responsible	100.0*	0.0	0.0	0.0	40.0	60.0	0.0
Incidentally associated	100.0**	0.0	0.0	10.2	36.7	40.9	12.2
They trust me							
Responsible	100.0*	0.0	0.0	10.0	70.0	20.0	0.0
Incidentally associated	100.0**	0.0	0.0	16.3	44.9	28.6	10.2
The respect the university and the cooperative extension service							
Responsible	100.0*	0.0	0.0	20.0	50.0	30.0	0.0
Incidentally associated	100.0**	0.0	6.1	32.7	36.7	14.3	10.2
Feel I am one of them							
Responsible	100.0*	20.0	0.0	30.0	40.0	10.0	0.0
Incidentally associated	100.0**	4.1	6.1	38.8	30.6	10.2	10.2
We regard each other as friends							
Responsible	100.0*	0.0	0.0	10.0	60.0	30.0	0.0
Incidentally associated	100.0**	0.0	0.0	20.4	47.0	22.4	10.2
We enjoy our association with each other							
Responsible	100.0*	0.0	0.0	0.0	70.0	30.0	0.0
Incidentally associated	100.0**	0.0	0.0	20.4	44.9	24.5	10.2
Have become one of their highly trusted sources of information							
Responsible	100.0*	0.0	0.0	40.0	50.0	10.0	0.0
Incidentally associated	100.0**	0.0	2.0	28.6	44.9	14.3	10.2

*N = 10 in each case
**N = 49 in each case

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TABLE 2 PERCENT OF SUBJECT MATTER SPECIALISTS ASSIGNED TO THE SMALL FARM FAMILY PROGRAM CLASSIFIED BY THEIR VIEWS ON HOW MUCH VARIOUS STRATEGIES SHOULD BE STRESSED IN WORKING WITH SMALL FARMERS COMPARED TO WORKING WITH OTHERS

Communication or Change Strategy - Extent of Specialists Commitment to the Program	View on How Much Strategy Should be Stressed					
	Total (%)	Less (%)	More (%)	About Same (%)	Don't Use (%)	NA (%)
On-farm personal contacts						
Responsible	100.0*	0.0	80.0	20.0	0.0	0.0
Incidentally associated	100.0**	2.0	63.4	26.5	2.0	0.1
Use of written educational materials						
Responsible	100.0*	50.0	0.0	50.0	0.0	0.0
Incidentally associated	100.0**	32.7	14.3	44.9	2.0	6.1
Help with personal problems						
Responsible	100.0*	0.0	60.0	40.0	0.0	0.0
Incidentally associated	100.0**	8.2	34.7	42.8	6.1	8.2
Doing things for which skills are lacking						
Responsible	100.0*	10.0	40.0	40.0	10.0	0.0
Incidentally associated	100.0**	12.2	44.9	28.6	8.2	6.1
Helping them get credit, services and supplies						
Responsible	100.0*	0.0	70.0	20.0	10.0	0.0
Incidentally associated	100.0**	4.1	57.1	28.6	4.1	6.1
Working with them in groups						
Responsible	100.0*	50.0	20.0	30.0	0.0	0.0
Incidentally associated	100.0**	24.5	20.4	40.8	8.2	6.1
Personal one-to-one contacts						
Responsible	100.0*	0.0	90.0	10.0	0.0	0.0
Incidentally associated	100.0**	0.0	67.4	24.5	2.0	6.1
Working with them as families						
Responsible	100.0*	0.0	70.0	30.0	0.0	0.0
Incidentally associated	100.0**	0.0	49.0	34.7	10.2	6.1

*N = 10 in each case
**N = 49 in each case